ABSTRACT OF THE DISCLOSURE

In a finite state machine (FSM_{verify}) a set of goal states, to be searched for their reachability from a start state, is defined.

An overapproximated path is found from a start state to a goal state by a

5   forward approximation technique. The overapproximated path representation relies upon a partitioning of the state and input bits of FSM_{verify}. A state matrix of the overapproximated path is organized by time-steps of FSM_{verify} along a first dimension and by partitions of FSM_{verify} state bits along a second dimension.

An underapproximated path, along the path of the stepping stone matrix,

10   is determined. Underapproximation is typically accomplished by simulation.

A sequence of states to be output is updated with the underapproximated path.

If a start to goal state sequence has been found, the procedure ends. Otherwise, the above steps of over and under approximation are repeated, using

15   the results of the last underapproximation as a start state.